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# GEOTECHNICAL CHARACTERIZATION OF MARINE CLAY ALONG JALAN SULTAN AHMAD SHAH, PENANG

By

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**DECLARATION BY THE CANDIDATE**

I Nur Aisyah Amin , UiTM no. 2002611831 confirm that the work is my own and the appropriate credit has been given where reference has been made to the works of others.

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## ABSTRACT

Marine clay is one type of soft soil which is commonly found along the coastal areas at West Peninsular Malaysia. Soft soil is not ideal from the viewpoint of soil engineering because of the problem they bring in construction. The problem of soft soil is it is very weak to take the load and settlement after construction. Due to rapid growth of industrialization, coastal area of Penang Island which is the centre of Northern region is attracting numerous civil engineering activities. Soft soil in Penang Island needs to be studied because there is very few information on the geotechnical characteristic for the area. Besides, more information on soft soil properties and their correlation are required by the engineer and public. This desk study research work compiled the analysis results and interpretation of the geotechnical site investigation carried out at three sites located along Jln Sultan Ahmad Shah. The geotechnical properties discuss are index and mechanical properties. Generally, the result shows that the soft soil properties of the study area are within the limit of Malaysian soft clay. The moisture content of marine clay ranges from 40% to 126%. The liquid limit and plasticity index of the marine clay normally in the range of 50% to 100% and 20% to 60% respectively. The compiled data from the three sites reveal that moisture content in upper layer is close to liquid limit rather than plastic limit. However for site C, it has the same case with Klang area as reported by Chen et al. (2004) which moisture content higher than liquid limit near to the ground level. The bulk density obtained in the range of 13.56 kN/m$^3$ to 16.9 kN/m$^3$. The overconsolidation ratio for the marine clay layer is generally found in the range of 0.64 to 3.36. Compression index for marine clay vary over a relatively large range of 0.17 – 1.716. The output of this study could be used as reference for adjacent areas of similar geological formation and future works.

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